Amendments to the Claims

1. (Currently amended) An apparatus for electrorheological printing, the apparatus comprising:

a pressurized ink chamber configured to contain an electrorheological ink, the pressurized ink chamber in fluid communication with a nozzle;

a stimulator configured to generate a synchronization signal to increase the pressure in the pressurized ink chamber, wherein the increased pressure within the pressurized ink chamber causes the electrorheological ink to discharge through the nozzle; and

an electrode arrangement configured to create an electric field to control a rate of discharge of the electrorheological ink through the nozzle, wherein the electrode arrangement is further configured to create an electric field with a magnitude sufficient to stop the discharge of the electrorheological ink through the nozzle and configured to create an electric field with a lower magnitude to permit electrorheological ink to discharge through the nozzle.

2 (Original) The apparatus of claim 1, wherein the electrode arrangement comprises a ring electrode pair having a first ring electrode and a second ring electrode.

3. (Original) The apparatus of claim 2, wherein the first ring electrode is connected to a first electrical lead and the second ring electrode is connected to a second electrical lead.

4. (Original) The apparatus of claim 3, wherein the first electrical lead is connected to a reference voltage and the second electrical lead is connected to a power supply, the power supply configured to supply a voltage that is different from the reference voltage.

5. (Original) The apparatus of claim 1, wherein the electrode arrangement comprises one or more electrodes circumscribing a portion of the nozzle.

6. (Cancelled)

7. (Cancelled)

8. (Previously presented) The apparatus of claim 1, wherein the nozzle is a first nozzle of a plurality of nozzles forming a nozzle array and the electrode arrangement is one of a plurality of electrode arrangements, each electrode arrangement disposed to control a rate of discharge of a flow of the electrorheological ink through one of the plurality of nozzles.

9. (Previously presented) The apparatus of claim 8, wherein a flow of the electrorheological ink through each nozzle of the nozzle array is independently controlled.

10. (Original) The apparatus of claim 1, further comprising a print control module configured to control electrorheological printing, the print control module comprising:

a print control module configured to receive a print signal;

a synchronization signal module configured to control the synchronization signal generated by the stimulator; and

an electrode control module configured to synchronize a voltage level at the electrode arrangement with the synchronization signal and the print signal.

11. (Original) The apparatus of claim 10, wherein the electrode control module is further configured to de-energize the electrode arrangement about when the synchronization signal and the print signal are enabled.

12. (Original) The apparatus of claim 10, further comprising a pump control module configured to control a pump to control the pressure in the pressurized ink chamber.

13. (Previously presented) The apparatus of claim 10, further comprising a viscosity control module configured to control a viscosity of the electrorheological ink as the electrorheological ink discharges from the nozzle.

14. (Original) The apparatus of claim 10, further comprising a media compensation module configured to modify the voltage level at the electrode arrangement to compensate for a variation in a speed of a print media on which the electrorheological ink is being printed.

15. (Currently amended) An apparatus for electrorheological printing, the apparatus comprising:

a nozzle configured to discharge a drop of ink;

an ink having an electrorheological composition, the ink configured to change viscosity in response to an electric field, the ink being under pressure within the nozzle; and

an arrangement of ring electrodes configured to create the electric field to control the rate of discharge of the drop of ink ~~from~~ through the nozzle, wherein the electrode arrangement is further configured to create an electric field with a magnitude sufficient to stop the discharge of the electrorheological ink through the nozzle and to create an electric field having a lesser magnitude to allow electrorheological ink to discharge through the nozzle.

16. (Currently amended) An apparatus for electrorheological printing, the apparatus comprising:

a nozzle array defining a plurality of nozzles, each nozzle defining a nozzle volume configured to contain an electrorheological ink particle wherein the electrorheological ink is under pressure within each nozzle volume;

a plurality of ring electrodes forming a plurality of ring electrode pairs, each of the plurality of ring electrodes circumscribing one of the plurality of nozzles and each ring electrode pair corresponding to one of the plurality of nozzles; and

a power supply connected via at least one electrical lead to one of each of the plurality of ring electrodes in each ring electrode pair, the power supply configured to supply power to the connected ring electrodes, thereby creating an electric field in each nozzle volume at each electrode ring pair, wherein the electric field controls a rate of discharge of the electrorheological ink particle through each nozzle volume, wherein the

ring electrode pair is further configured to create an electric field having a magnitude sufficient to stop the discharge of the electrorheological ink through said each nozzle volume and to create an electric field having a lesser magnitude to permit ink to discharge through said each nozzle volume.

17. (Currently amended) A computer readable storage medium comprising computer readable code configured to carry out a method for electrorheological printing, the method comprising:

pressurizing an electrorheological ink in an ink chamber, the ink chamber in fluid communication with a nozzle;

generating a synchronization signal, the synchronization signal increasing the pressure in the pressurized ink chamber, wherein the pressure within the pressurized ink chamber causes the electrorheological ink to discharge through the nozzle; and

creating an electric field in an electrode arrangement to control a rate of discharge of the electrorheological ink through the nozzle, wherein the electrode arrangement is further configured to create an electric field having a magnitude sufficient to stop the discharge of the electrorheological ink through the nozzle and to create an electric field having a lesser magnitude to permit electrorheological ink to discharge through the nozzle.

18. (Previously presented) The computer readable storage medium of claim 17, wherein creating an electric field comprises creating a voltage difference between a first electrode and a second electrode.

19. (Original) The computer readable storage medium of claim 18, wherein the first and second electrodes are ring electrodes, each ring electrode circumscribing a portion of the nozzle.

20. (Previously presented) The computer readable storage medium of claim 17, wherein controlling the rate of discharge of the electrorheological ink through the nozzle comprises changing a viscosity of the electrorheological ink.

21. (Cancelled)

22. (Cancelled)

23. (Original) The computer readable storage medium of claim 17, wherein the method further comprises discharging a drop of the electrorheological ink from the nozzle.

24. (Original) The computer readable storage medium of claim 17, wherein the method further comprises de-energizing the electrode arrangement about when the synchronization signal and the print signal are enabled.

25. (Original) The computer readable storage medium of claim 17, wherein the method further comprises receiving a print signal.

26. (Original) The computer readable storage medium of claim 17, wherein the method further comprises controlling a pump to control the pressure in the pressurized ink chamber.

27. (Previously presented) The computer readable storage medium of claim 17, wherein the method further comprises controlling a viscosity of the electrorheological ink as the electrorheological ink discharges from the nozzle.

28. (Original) The computer readable storage medium of claim 17, wherein the method further comprises modifying the electric field to compensate for a variation in a speed of a print media on which the electrorheological ink is being printed.

29. (Currently amended) A method for electrorheological printing, the method comprising:

pressurizing an electrorheological ink in an ink chamber, the ink chamber in fluid communication with a nozzle;

generating a synchronization signal, the synchronization signal increasing the pressure in the pressurized ink chamber, wherein the pressure within the pressurized ink chamber causes the electrorheological ink to discharge through the nozzle; and

creating an electric field in an electrode arrangement to control a rate of discharge of the electrorheological ink through the nozzle, wherein the electrode arrangement is

further configured to create an electric field having a magnitude sufficient to stop the discharge of the electrorheological ink through the nozzle and to create an electric field having a lesser magnitude to permit electrorheological ink to discharge through the nozzle.

30. (Currently amended) An apparatus for electrorheological printing, the apparatus comprising:

means for pressurizing an electrorheological ink in an ink chamber, the ink chamber in fluid communication with a nozzle;

means for generating a synchronization signal, the synchronization signal increasing the pressure in the pressurized ink chamber, wherein the pressure within the pressurized ink chamber causes the electrorheological ink to discharge through the nozzle; and

means for creating an electric field in an electrode arrangement to control a rate of discharge of the electrorheological ink through the nozzle, wherein the electrode arrangement is further configured to create an electric field having a magnitude sufficient to stop the discharge of the electrorheological ink through the nozzle and to create an electric field having a lesser magnitude to permit electrorheological ink to discharge through the nozzle.